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EG&G ENERGY MEASUREMENTS

Las Vegas Area Operations

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14 January 1987

L-87-012

Mr. Gylan C. Allen, Director
Nuclear Systems Division
Nevada Operations Office
U. S. Department of Energy
P. O. Box 14100
Las Vegas, NV 89114

SUBJECT: EG&G COMMENTS FOR MIGHTY DERRINGER

Dear Mr. Allen:

Attached, per your request, are three attachments containing EG&G comments and lessons learned from the exercise. The first two sets of comments concern the overall exercise at both sites. The third attachment addresses significant interagency interactions observed by EG&G.

The overall EG&G early conclusion about the exercise is very positive.

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Problems which did occur were generally minor.

The training for EG&G personnel involved was both positive and extensive, covering all aspects of a major deployment. We appreciate the opportunity to participate in this major exercise of resources vital to our nation.

Very truly yours,

EG&G Energy Measurements, Inc.

(ORIGINAL SIGNED BY J. DOYLE)

H. A. Lamonds
Manager, NV Program

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Attachments a/s

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MIGHTY DERRINGER COMMENTS
EG&G OCONUS VIEW

From the EG&G/EM perspective, the Mighty Derringer exercise was by far the largest and most complex NEST exercise to date. Very valuable training occurred for all of our personnel who participated at both exercise sites and in the home support team. EG&G participants appreciated the opportunity to test and train on a large number of the improvements which have been made in both equipment and procedures since the last major NEST exercise. Our overall assessment at this early stage of the exercise review is that the majority of these improvements worked very well. Earlier deficiencies in communications and search command and control have clearly been corrected. Nevertheless, several areas for future improvement were observed during the exercise and will be discussed below. We have organized our comments by function in order to make it easier to integrate them with comments from the other NEST participants.

COMMANDER FOR SUPPORT

1. During the predeployment planning, the most difficult, single planning task was obtaining and organizing a total roster of personnel and equipment from all organizations. Although we had a partial handle on the problem, it was greatly complicated by the large-scale dual deployment and the sheer magnitude of the number of players involved. Specifically, the 1200 baud computer link to the LLNL CATCOMS personnel roster proved to be totally inadequate to move the volume of personnel information that was needed in a short period of time. A backup computer in Las Vegas and the use of word processors solved the immediate problem, but a better long-term solution is required.

   For a total equipment list, it would be extremely helpful if each organization could provide an initial list of major equipment categories and an equivalent number of USAF 463L pallets (i.e. 7X7X7). For example the list might be:

Three pallets	-	Communications
One pallet	-	CP Support
Two pallets	-	Search gear
One half pallet	-	Health Physics
One pallet	-	Photo

   Since the number of pallet spaces available on the various MAC cargo aircraft are fixed, this would greatly facilitate determining the number and type of aircraft required at each location. It is also extremely important to identify which loads will have hazardous cargo.

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2. The use of a larger than usual Advance Party for the OCONUS deployment proved essential for establishing operations and making critical logistics arrangements prior to arrival of the Main Party. The delays in getting the Main Party in-country were probably realistic and this further taxed the Advance Party to sustain a longer than 24-hour operation until relief arrived.

3. Throughout the exercise at the OCONUS site, the interface and support from all personnel who filled the role of Director for Administration and Logistics was excellent. Since this was the first exercise for most of these personnel, and considering the magnitude and complexity of the exercise, this was a major accomplishment. In spite of being new to NEST, it was obvious that they made good use of their extensive field operations expertise and it was greatly appreciated.

4. The exercise freedom to select both the CP and TOC OCONUS was greatly appreciated. Although even more space was critically needed for the TOC, player control of the location permitted the best communication to date between the two locations.

CP - More space is required for the intelligence and assessment staff and their large array of equipment. Additional space would also be useful for the other CP functions as well. The use of connected rooms seemed to greatly help the noise control and confusion problems that have occurred in the past. Meeting space is essential for decision and option discussions.

TOC - At least double the space available for the TOC is needed. In addition, the Commander for Science and the EOD Commander need meeting room space. The EOD staff requires an administrative area; and the various technical groups may require rooms to assemble large maps, drawings, hardware mockups, etc. All of this additional space must be within easy walking distance of the TOC and probably requires the same security control.

From the Commander for Support perspective, it seems essential also to have the CP and TOC relatively close. Although some separation is desirable, the volume of paperwork and the frequent need for short meetings or status briefings involving personnel from both locations warrants serious consideration for a separation of 1000 feet or less, rather than miles.

COMMUNICATIONS

5. The major concern in the communications support area prior to deployment, was the recognition that the communications staffing was inadequate for a single, complex deployment. The dual deployment stretched the staffing

even further. A number of additional personnel were trained and assigned to the communications group similar to reserve search personnel. For the most part, the communications reserve personnel were a great help. The added reliability of the new telephone system also helped. The problem of inadequate, fully trained staff, however, did impact the exercise. Troubleshooting was slow where the full-time communication personnel were not available. Setup time for some systems could also have been shortened. Finally, the lack of enough personnel, even with the reserves, prevented use of the DITS system which would have been helpful to the Hazards and Effects staff. There was also an 11th hour need to get an image from one site to the other that could not be sent by FAX for which DITS would have been the ideal solution.

6. The telephones and radios worked very well throughout the exercise. The use of four VHF nets at the OCONUS site worked very well in separating the operational and the maintenance traffic. In one case, a high wind during the night blew down one of the radio repeater antennas; however, the unit continued to operate without degradation until discovered the following day.

7. All of the crypto equipment saw almost continuous use throughout the exercise. The KY71/FAX and the KW-7 teletype were overloaded with traffic. An operational review of traffic is needed to see if the volume of this traffic can be reduced. Other means could be explored for handling a much larger traffic volume if the requirements are real. A quick fix for intermittent overload situations would be for management to prioritize the traffic. The addition of STU III equipment in about one year will alleviate a portion of this present load.

8. Data communications from the WP to the TOC was not available when needed due to communications personnel being excluded from the WP site to set up and check out the data transmission hardware. The telephones and video circuits between the WP and the TOC were used extensively. A few failures in the microwave link were attributed to very high level noise bursts. This noise was never located. The same data configuration during the JIGSAW experiment worked well except for a modem problem. The lack of access to set up and properly adjust the system made it impossible to diagnose the failure.

PHOTO/VIDEO

9. All of the support elements including Photo/Video were poorly utilized. Although they supported a heavy workload, their full potential was missed since they were only considered as an afterthought. The WP access problem severely limited their effectiveness with one or two exceptions.

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10. A proof display room or area is needed adjacent to the TOC. Material shot for one request may be important to others as well. Since it is not possible to rapidly produce large volumes of enlargements of every frame taken, a proof room would assure that all technical groups could be aware of all imagery available.

11. Video personnel and their array of equipment were also badly under utilized. Both the photo and video capabilities offer a way to conduct an initial, detailed recon of an area, and could have provided useful information prior to the assault through the use of long lenses and low-light level equipment. They should also be considered for the initial entry party since the quality of their product far exceeded that of anything else we saw at the OCONUS site. For the video link, they also offer much higher quality images as well as recording, editing, and enhancement capability.

ELECTRO/MECHANICAL

12. The electro/mechanical support team was better utilized than in any past exercise. Through the recent ARG exercises, the EOD personnel have begun to learn how to use these capabilities.

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